1. Solve the equation for x and choose the interval that contains x (if it exists).

$$16 = \sqrt[6]{\frac{22}{e^{6x}}}$$

  A. $x \in [2.2, 3.4]$

  B. $x \in [-1.4, 1.1]$

  C. $x \in [-18.6, -16]$

  D. There is no Real solution to the equation.

  E. None of the above.

2. Which of the following intervals describes the Range of the function below?

$$f(x) = \log_2 (x + 9) - 5$$

  A. $[a, \infty), a \in [-10.2, -5.6]$

  B. $[a, \infty), a \in [6.2, 11.8]$

  C. $(-\infty, a), a \in [-6.1, -2.3]$

  D. $(-\infty, a), a \in [4.4, 7.2]$

  E. $(-\infty, \infty)$

3. Which of the following intervals describes the Domain of the function below?

$$f(x) = -e^{x+1} + 4$$

  A. $(a, \infty), a \in [-7, 2]$

  B. $(-\infty, a], a \in [-2, 7]$

  C. $(-\infty, a), a \in [-2, 7]$

  D. $[a, \infty), a \in [-7, 2]$

  E. $(-\infty, \infty)$

4. Solve the equation for x and choose the interval that contains x (if it exists).

$$21 = \sqrt[7]{\frac{24}{e^{7x}}}$$

   A. $x \in [1.59, 3.59]$

   B. $x \in [-23.45, -18.45]$

   C. $x \in [-0.42, 0.58]$

   D. There is no Real solution to the equation.

   E. None of the above.

5. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_4 (-4x + 6) + 4 = 3$$

   A. $x \in [1.1, 1.26]$

   B. $x \in [-1.83, -1.73]$

   C. $x \in [1.28, 1.53]$

   D. $x \in [-14.57, -14.44]$

   E. There is no Real solution to the equation.

6. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$3^{5x+4} = 125^{4x-5}$$

   A. $x \in [-28.54, -22.54]$

   B. $x \in [-0.35, 1.65]$

   C. $x \in [-11, -6]$

   D. $x \in [2.06, 3.06]$

   E. There is no Real solution to the equation.

7. Which of the following intervals describes the Range of the function below?
$$f(x) = -\log_2(x-4) - 7$$

   A. $[a, \infty), a \in [-6.4, -1.1]$

   B. $(-\infty, a), a \in [-10.7, -5.3]$

   C. $[a, \infty), a \in [1.1, 4.8]$

   D. $(-\infty, a), a \in [5.7, 7.2]$

   E. $(-\infty, \infty)$

8. Which of the following intervals describes the Domain of the function below?
$$f(x) = e^{x+9} - 4$$

   A. $(-\infty, a), a \in [-9, -1]$

   B. $(a, \infty), a \in [2, 11]$

   C. $(-\infty, a], a \in [-9, -1]$

   D. $[a, \infty), a \in [2, 11]$

   E. $(-\infty, \infty)$

9. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$5^{-3x+3} = 49^{-4x-4}$$

   A. $x \in [-2.1, -1.1]$

   B. $x \in [-7.6, -5.6]$

   C. $x \in [-0.8, -0.5]$

   D. $x \in [-22.4, -19.8]$

   E. There is no Real solution to the equation.

10. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_3\left(-4x + 8\right) + 4 = 2$$

 A. $x \in [3.61, 4.05]$

 B. $x \in [-0.52, -0.19]$

 C. $x \in [1.89, 2.2]$

 D. $x \in [-0.21, 0.33]$

 E. There is no Real solution to the equation.